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May 22, 2003

Priorities for the 21st Century

A Strategic Plan for NOAA's Satellite and Information Service For FY 2003-2008 and Beyond

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Environmental Satellite, Data and Information Service



Foreword: Overarching and Enabling Principles

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Our work to support NOAA's mission goals will be accomplished through of a set of overarching and enabling principles. Those principles allow us to be more flexible, adaptable, and integrated.

Overarching Principles

- **Customer Service:** Responsiveness to the needs and requirements of our constituents, stakeholders, and customers is a guiding NESDIS value. Effective outreach will enable our customers to better use our products and services to make sound decisions affecting the environment, economy, and our security.
- **Improved Data Utilization:** Realizing the full benefits of satellite and ground-based data and information management systems increases return on our resources and more directly focuses on user needs and requirements. Improved data integration and utilization will require development of new algorithms, enhanced data assimilation, development of long-term data sets, expanded applications, and better telecommunications from data-sparse areas.
- **Multi-disciplinary Systems Approach :** A multiple disciplinary approach toward meeting requirements for observing systems and data management helps to maximize the return on investment. Use of multi-disciplinary systems and science also allows for more integrated solutions. Examples for the future include: carbon cycle monitoring; salinity measurement and assimilation; hyperspectral technology and applications; wide-swath satellite altimetry for coastal applications and forecasts; land and water measurements for the monitoring the hydrological cycle; and improved radar systems. The coordination of new requirements will take place in the context of NOAA's four mission goals.

Enabling Principles

- **End-to-end Planning:** To meet the requirements of user communities, new observing systems must be deliberately designed and funded to include end-to-end services from calibrated observations and data collection. Data processing, product development and validation, product distribution, assimilation, integration of diverse networks, integration of ground and space systems, archiving, and customer support must be included
- **National Civil Space Architecture:** Leveraging from our efforts to develop a NOAA observing system architecture, and our critical role in implementing the President's new Commercial Remote Sensing Space Policy, NOAA is poised to take the lead in the interagency group of the Committee on Environment and Natural Resources to prepare an architecture for the Nation, as well as a 10-year plan for implementing observations in accordance with National requirements.
- **Research to Operations Transition:** Critical to bridging the gap between research to operations is to develop and implement an aggressive plan to transition the Research and Development (R&D) satellites of NASA and other agencies to operations. This requires formalizing road maps to continuous infusion of new science and technology and removing barriers to acquiring advanced satellite technology opportunities to benefit the Nation. Several cases of such transitions with NASA and DOD partners include GIFTS, NPP, and Jason. Such R&D transition programs must also include concomitant investment in applications development, data utilization, infrastructure support, and advanced customer support activities.
- **Design More Efficient Satellite and Information Systems:** The robustness of our future observing and information systems will be based on sound investments in technology and applied research that allows continuous improvements and new capabilities at an affordable cost.

- **Partnerships** – A true integrated global observation network exceeds the capability of any one country or any one agency. As a result, international and interagency cooperation is necessary to address duplication, omission of existing and planned environmental observing systems. A first step to building an integrated global observing system is to garner support from senior level government representatives to promote the value of a global Earth observation system that integrates space-based and in situ observations. U.S. led efforts such as the July 2003 Earth Observations Summit demonstrate our commitment to environmental stewardship and the promotion of sound science for the benefit all nations of the world. University and industrial partners are also critical to our planning and implementation of the range of observing and data management activities.

Finally, I want to recognize that nothing on this page or the pages that follow is possible without the dedication and commitment of every member of the NESDIS family. I salute their teamwork and service to the Nation.

Gregory Withee, NESDIS Administrator

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New Priorities for the 21st Century: One NOAA

OUR VISION

To be the source for the world's most comprehensive and easily accessible environmental products and information.

OUR MISSION

To provide timely access to global environmental data and information services from satellites and other sources in support of the larger NOAA mission.

OUR CORE VALUES

People, Integrity, Excellence, Teamwork, Ingenuity, Science, Service and Stewardship.

BENEFITS TO THE NATION

NOAA's Environmental Satellite, Data, and Information Service (NESDIS) touches nearly all sectors of society in some way. NOAA observing systems provide access to global environmental data and information services from satellites and other sources to promote, protect, and enhance the Nation's economy, security, environment, and quality of life. NESDIS provides the resulting information to both NOAA and non-NOAA agencies, allowing them to produce additional products and services, such as severe storm warnings, short and long term weather forecasts, climate analyses, and the provision of satellite-aided search and rescue services. The NESDIS Team contributes to the national economy by providing environmental data, which support resource management in many areas, such as energy, water, global food supplies, and other economic and environmental resources. Our environmental satellite observations are an important contribution to U.S. national security, providing military users real-time and near real-time information for aircraft, ships, ground forces, and facilities around the world.

Mission Goals

NOAA's Satellite and Information Services supports the NOAA mission, with a focus through 2008, on four overarching NOAA Mission Goals:

- Protect, restore, and manage the use of coastal and ocean resources through ecosystem management approaches.
- Understand climate variability and change to enhance society's ability to plan and respond.
- Serve society's needs for weather and water information.
- Support the Nation's commerce with information for safe and efficient transportation.

A service-oriented NOAA Line Office, NESDIS provides requirements-driven environmental observations, life-cycle data stewardship, and responsive environmental information services to NOAA users. To fulfill its responsibilities, NESDIS acquires and manages the Nation's operational environmental satellites, provides data and information services, and conducts related research to enhance access to and use of environmental data and information. Through NOAA's polar-orbiting and geostationary satellite systems NESDIS collects, processes and delivers to NOAA's users near real-time satellite observations of the Nation's and global ecosystems. Where NOAA's operational satellite systems are not sufficient, NESDIS provides for the acquisition of international satellite observations, non-NOAA federal research satellite observations (e.g., NASA), and commercial imagery.

ORGANIZATION OF THE MISSION GOALS

Following the NOAA Strategic Plan, this NESDIS Plan presents for each mission goal a background description of its strategic context. As with the NOAA plan, this Strategic Plan establishes at a high level the approaches we will take to establish accountability for results, and specific measures against which we will gauge our success.

Each of the mission goals is organized according to the mission strategies and measures of success that reflect NOAA's general daily activities. The applicable NOAA strategies are:

- C Monitor and Observe the land, sea, atmosphere, and space and create a data collection network to track Earth's changing systems.
- C Understand and Describe how natural systems work together through investigation and interpretation of information.
- C Assess and Predict the changes of natural systems, and provide information about the future.
- C Engage, Advise and Inform individuals, partners, communities, and industries on needed information, and assist them in its use and application.

MISSION GOAL 1. PROTECT, RESTORE AND MANAGE THE USE OF COASTAL AND OCEAN RESOURCES THROUGH ECOSYSTEM MANAGEMENT APPROACHES

Increasing pressures on the Nation's coastal and ocean resources create a growing requirement to streamline the processes that lead to timely and accurate ecosystem management and public policy decisions. Decision-makers require the best available scientific data to formulate sound policies affecting resource management, utilization, and conservation.

Daily marine ecosystem relevant products produced by the NESDIS-operated NOAA CoastWatch include sea surface temperature, chlorophyll concentrations (indicative of biological activity levels), water clarity (turbidity) and meteorological parameters such as surface winds. These products are actively used in fisheries and coastal wastewater management activities. Terrestrial ecosystem products include vegetative health and surface water availability indices.

NESDIS facilitates the use of satellite and other ecosystem observational data by providing web-enabled access to distributed sources of data through web portals and gateways. These gateways, now being deployed by NESDIS's National Coastal Data Development Center, allow multiple sources of data to be accessed by users through single point-of-entry web sites, thus simplifying the user's data assembly and analysis tasks.

Ecosystem change detection in critical ecosystems, such as coral reefs, is supported through the development of ecosystem baseline conditions. Aggregated spatially-enabled data sets, systematically analyzed using available data from the present back to earliest instrumented records are the base. These baselines then can be used to improve the timely detection of ecologically significant changes over broad regions using satellite observations through programs such as Coral Reef Watch, and over pre-historic times.

OUTCOME MEASURES FOR MISSION GOAL 1:

- C Increased number of coastal and marine ecosystems maintained at a healthy and sustainable level.
- C Increased socioeconomic value of the marine environment and resources (e.g. seafood, recreation and tourism).

STRATEGIC OBJECTIVES

Goal-Wide Ecosystem Strategy:

The most significant level of support is provided through NESDIS-managed environmental satellite programs through which environmental satellite observations are collected, processed, and used to generate observation-based products. The second principal support area includes the life-cycle archival, management and assessment of NOAA's ecosystem-related environmental data holdings. The third area supports the assessment of future observational requirements and the incorporation of those requirements into future upgrades to NOAA environmental satellite and data management system.

All of these provide and will continue to provide for a NESDIS strategy which will support:

- C Increasing the number of regional ecosystems identified and monitored with agreed to indicators of ecosystem health.
- C Increasing the number of models linking climate/weather/atmosphere with ecosystem/hydrology made operational to assess and predict natural and human-induced changes in the ocean and coastal environment.
- C Increasing number of coastal, ocean, and Great Lakes areas (including coastal

watersheds) with Federal, state, and local government or non-governmental management plans using ecosystem best management practices and approaches.

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STRATEGIES AND MEASURES OF SUCCESS for Objective A. Protect and restore ocean, coastal, and Great Lakes resources; Objective B. Recover protected species; and Objective C. Rebuild and Maintain Sustainable Fisheries:

Monitor and Observe: NESDIS will ensure the availability of value-added, cost-effective global Earth-observing systems, integrating satellite, airborne, and in-situ (surface: land and ocean) ground assets, that provide critical data and information needed to support NOAA's goal of improving mission performance through:

- C Increased area covered and number of ecological conditions monitored by state-of-the-art observation systems and platforms that provide necessary information for NOAA's stewardship responsibilities

Understand and Describe: NESDIS will realize the full potential of current and future satellite, airborne, and in-situ based data and information management systems to respond to customer requirements to support NOAA's goal of improving mission performance through:

- C Increased number of techniques and tools that can be used to restore and protect ocean, coastal, and Great Lakes resources.

Assess and Predict: NESDIS will improve and expand products, techniques, and services to increase availability, reliability, and timeliness of observations to improve NOAA's mission performance through:

- C Increased number and accuracy of forecasts of significant ecological events and trends (such as, harmful algal blooms, coral bleaching, and population shifts).

Engage, Advise and Inform: NESDIS will ensure that customers have access to observational data using traditional delivery methods (journals, papers, conferences), real-time and near real-time access through the Internet and other e-commerce approaches, and through educational initiatives to support NOAA's goal of improving mission performance through:

- C Increased percentage of coastal communities and coastal inhabitants aware of – and acting appropriately – to minimize their impacts on coastal, ocean and Great Lakes resources.

<p>MISSION GOAL 2. UNDERSTAND CLIMATE VARIABILITY AND CHANGE TO ENHANCE SOCIETY'S ABILITY TO PLAN AND RESPOND</p>
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OUTCOME GOAL 2: NESDIS provides critical data, information, products, assessments, and services to ensure that NOAA meets this goal. NESDIS maintains the world's largest archive of climate-related data and information spanning the ice age to the space age. NESDIS operates the Nation's operational satellite observing system through which essential data is derived to understand climate variability and change. NESDIS also operates the Nation's Climate Reference Network, providing reference quality data for temperature and precipitation monitoring. Data and information from these observing systems are

used along with other climate-related NOAA and non-NOAA observing system data to construct the most reliable records possible regarding local, regional, national, and global climate variability and change. Data and products from NOAA's archives are employed by millions of users each year spanning government, academia, private citizen, and private sector users including agribusiness, construction, engineering, energy, fisheries, health, insurance, landscape architects, law, manufacturing, news media, recreation, tourism, retailing, transportation, water utilities – all climate-sensitive activities.

NESDIS acts as the Nation's official scorekeeper of climate variations and changes, including extreme weather and climate events. The data and information made available by NESDIS are developed into effective climate adaptation strategies. NESDIS also calculates the official climatologies and normals used by the Nation to most effectively minimize the risks of unanticipated climate variations and changes and maximize the benefits of a well-adapted climate. NOAA's ability to detect and predict climate events such as El Nino and La Nina have dramatic impacts on agriculture, water resources, energy, fisheries, and ultimately all U.S. consumers.

A new observing system is now being deployed, the U.S. Climate Reference Network (USCRN). NESDIS is working with its partners in NOAA Research and NOAA National Weather Service, the Regional Climate Centers, and the Nation's State Climatologists to ensure the highest quality reference system is fully operation within the next few years. The key objective of the USCRN is to provide a traceable, documented standard reference point for all U.S. measurements of temperature and precipitation.

The Nation's archive of observed and analyzed environmental data is a precious and irreplaceable resource. The volume of data is growing, and will continue to grow, explosively. In order to handle the expected growth of data, NESDIS is embarking on a new approach to data management, Scientific Data Stewardship (SDS). SDS encompasses the end-to-end management approach addressing the need to effectively utilize past, present, and future data and information. SDS focuses on identifying potential errors and biases in observing systems early-on, before they permeate the climate record.

OUTCOME MEASURES FOR MISSION GOAL 2:

- C Increased use and effectiveness of climate information to improve long- range climate, weather, and water predictions
- C Increased use of the knowledge of how climate variability and change affect commerce

STRATEGIES AND MEASURES OF SUCCESS:

Monitor and Observe: NESDIS will ensure the availability of value-added, cost-effective global Earth-observing systems, integrating satellite, airborne and in-situ (surface: land and ocean) and ground assets, that provide critical data and information needed to support NOAA's goal of improving mission performance through:

- C Increased number of long-term observations collected, archived, available, and accessible where random errors and time-dependent biases have been minimized and assessed.

Assess and Predict: NESDIS will realize the full potential of current and future satellite airborne, and in-situ based data and information management systems to respond to customer requirements and support NOAA's goal of improving mission performance through:

- C Improved skill of climate variability forecasts.
- C Increased number, accuracy, and regional specificity of U.S. climate, water and coastal resource products.
- C Reduce uncertainty regarding long-term climate predictions, as measured through improvements to climate change models and increases in the range of their application.
- C Increased involvement of NOAA researchers and use of NOAA scientific results in national and international assessments.

- C Reduce uncertainty in the estimation of the United States terrestrial carbon sink.
- C Increased number of new indicators of climate impacts on marine ecosystems.

Engage, Advise and Inform: NESDIS will ensure that customers have access to observational data using traditional delivery methods (journals, papers, conferences), real-time and near real-time through the Internet and other e-commerce approaches, and through educational initiatives to support NOAA's goal of improving mission performance through:

- C Increased volume of NOAA climate data and information used by NOAA customers.

MISSION GOAL 3. SERVE SOCIETY'S NEEDS FOR WEATHER AND WATER INFORMATION

OUTCOME GOAL 3: Observations and dissemination of data are critical to weather information services, thus NESDIS' role in collecting, processing, distributing and archiving environmental data must continue to evolve to meet the national requirement for timely, accurate weather data and forecasts.

Recently, the intersections of the weather and water cycle have become of increasing interest to emergency managers, resource managers, U.S. and international decision makers, and the general public. Water is a critical driver for most climate processes, contributes to the evolution of weather systems, causes floods and droughts during extreme events, and is the natural resource that needs most effective management.

NESDIS satellite and information services supply observational data to both weather and water forecast models to gain a better understanding of the global weather and water cycles. These data include space-based and in-situ observations of weather and water parameters such as clouds, winds, precipitation, wave height, vegetation and soil moisture, along with associated metadata, that are distributed as data files and imagery products. The NOAA National Data Centers that NESDIS manages provide climatology, status reports and assessments, data access and archive for longer-term studies and permanent availability. In conjunction with the National Weather Service, the utilization of these NESDIS data ultimately lead to more accurate weather and water forecasts and products for public consumption and resource management.

OUTCOME MEASURES FOR MISSION GOAL 3:

- Increase accuracy and amount of lead time (by category or storm type e.g. hurricanes).
- Increased satisfaction with and benefits from NOAA information and warning services, as determined by surveys and analysis of emergency managers, first responders, natural resource and water managers, public health professionals, industry, government and the public

STRATEGIES AND MEASURES OF SUCCESS:

Monitor and Observe: NESDIS will ensure the availability of value-added, cost-effective global Earth-observing systems, integrating satellite, airborne, and in-situ (surface: land and ocean) and ground assets, that provide critical data and information needed to support NOAA's goal of improving mission performance through:

- Increased observations obtained and used from partners, both international and domestic.
- Increased percentage of observations archived, available, and accessible.
- Increased number of new multi-use observing systems deployed.

- Improved effectiveness of NOAA's observing systems.

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Understand and Describe: NESDIS will realize the full potential of current and future satellite, airborne, and in-situ based data and information management systems to respond to customer requirements to support NOAA's goal of improving mission performance through:

- Shortened cycle times from research (government and academic) to operations (e.g., models, technology, and techniques).
- Increased number of new research findings and progress toward their implementation in NOAA operations.

Assess and Predict: NESDIS will improve and expand products, techniques, and services to increase availability, reliability and timeliness of observations to support NOAA's goal of improving mission performance through:

- Increased volume of forecast and warning information formatted to readily clarify the uncertainty of an event (e.g., space weather, air quality, water and weather forecasts).

Engage, Advise and Inform: NESDIS will ensure that customers have access to observational data using traditional delivery methods (journals, papers, conferences), real-time and near real-time through the Internet and other e-commerce approaches, and through educational initiatives to support NOAA's goal of improving mission performance through:

- Increased community knowledge of, use of, and satisfaction with NOAA information that supports local air quality monitoring and forecast programs.
- Increased assistance to international partners to improve response capabilities to weather and water predictions.

MISSION GOAL 4. SUPPORT THE NATION'S COMMERCE WITH INFORMATION FOR SAFE AND EFFICIENT TRANSPORTATION

OUTCOME GOAL 4: NESDIS' information products and services are essential for safe and efficient transportation and commerce systems, which are crucial to the economic health of the Nation. NOAA's National Centers for Environmental Prediction require data from NESDIS' environmental observing systems to issue forecasts, warnings and alerts on the state of the environment. Commerce and transportation systems on the water, on the ground, in the air, and in space require on this information. NESDIS' centers archive these data and conduct environmental assessments that are required by the aviation, shipping, railroad, trucking and aerospace industries. Real-time and archived data provide a space-based perspective into forecasting and provides warning to protect lives and property by monitoring, predicting and assessing the impacts of natural and man-made disasters.

For aviation, NESDIS data and services are used to determine the safety of airline routes and flight plans. Unsafe flying conditions stemming from a loss in radio communication and the presence of ash clouds from volcanic activity as well as smoke and heat from large-area wild fires can be determined. As part of the Volcanic Ash Alert Center, NOAA scientists use satellite data along with ash cloud dispersion models

to determine the trajectory of the height of a volcanic ash plume. Based on these data, the Federal Aviation Administration issues warnings to U.S. aircraft operating in the vicinity of volcanic activity and wildfires and coordinates globally to provide guidance for safe operations of all aircraft.

In the marine industry, use of NESDIS data creates fuel savings by changing ship routes to account for wind driven sea state and ocean current patterns. It also identifies areas favorable to fishing, previews hazardous storm conditions so that advisories can be issued, indicates a window for favorable winter operations before ice closes down shipping lanes, and helps ensure the safety of recreational boating.

Along with the U.S. Coast Guard and Department of Defense (U.S. Air Force and Navy), NESDIS also supports the U.S. and international Search and Rescue system that is credited with saving over 14,000 people worldwide.

OUTCOME MEASURES FOR MISSION GOAL 4:

- Increased use and effectiveness of environmental information planning for marine, air, and surface transportation systems.

STRATEGIES AND MEASURES OF SUCCESS:

Monitor and Observe: NESDIS will ensure the availability of value-added, cost-effective global Earth-observing systems, integrating satellite, airborne and in-situ (surface: land and ocean) and ground assets, that provide critical data and information needed to support NOAA's goal of improving mission performance through:

- Increased reliability, frequency and use of marine, aviation and surface transportation related observations.

Understand and Describe: NESDIS will realize the full potential of current and future satellite and ground based data and information management systems to respond to customer requirements to support NOAA's goal of improving mission performance through:

- Increased capabilities of data acquisition technology, processing and analysis needed.

Assess and Predict: NESDIS will improve and expand products, techniques, and services to increase availability, reliability, and timeliness of observations to support NOAA's goal of improving mission performance through:

- Increased percentage of US ports where "nowcast" and weather and marine forecast models are implemented.
- Increased accuracy and use of weather and marine forecasts to increase efficiency of all land, water and air transportation systems.

Engage, Advise and Inform: NESDIS will ensure that customers have access to observational data using traditional delivery methods (journals, papers, conferences), real-time and near real-time access through the Internet and other e-commerce approaches, and through educational initiatives to support NOAA's goal of improving mission performance through:

- Increased percentage of U.S. ports where oceanographic and weather data are delivered in real time.

NOAA's CROSS-CUTTING PRIORITIES:

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NESDIS is the lead line office for the Integrated Global Observation and Data System Priority and fully supports the other five cross-cutting priorities as described below:

1. INTEGRATED GLOBAL OBSERVATION AND DATA SYSTEM - LEAD

NOAA will work with local, state, regional, national and international partners to develop global-to-local environmental observations and data management for comprehensive, continuous monitoring of coupled ocean/atmosphere/land systems. Improving world-wide environmental observations will enhance NOAA's ability to protect lives and property, enhance economic opportunities, understand climate and promote healthy ecosystems. NOAA will leverage observations from many platforms including satellites, ships, aircraft, buoys, submersibles, radars, climate reference stations, ASOS stations, and radiosondes. NOAA will continue to cooperate with key bilateral partners and play a vital role in the workings of multinational environmental observation coordination mechanisms. NOAA's data management system will provide decision makers with the infrastructure to support easily accessible and timely information services.

By the end of FY03, NOAA will develop an agency-wide Strategic Plan for its Observation and Data Management System. Multiple user requirements integrating atmospheric, oceanic, terrestrial, and fresh water observations to advance NOAA's missions will be addressed. In FY04, NOAA will extend this plan to encompass environmental observing systems operated by international and national partners to optimize use of available and planned resources. This investment will directly support the performance measures under each of NOAA's mission goals.

Strategies and Measures of Success include:

1. NOAA will develop an Integrated Global Environmental Observation and Data Management System based on user requirements and an integrated architecture based on user requirements.

- Percent of observing requirements met by observing systems.
- Improved performance (including time lines, reliability and maintainability) for users.
- Increased access to NOAA data sets meeting National Archives and Records Administration Guidelines.

The following milestones will be accomplished within 30 days of schedule in order to enable needed performance improvements:

- Establish NOAA-wide observing requirements.
- Inventory and assess NOAA observation systems capabilities to both maintain critical observations and to eliminate gaps, carried out as a function of requirements.
- Inventory and assess NOAA's data management capability to access, quality control, and archive these observations.
- Develop and implement an architecture process to periodically review existing capabilities and new requirements and capabilities.
- Periodically publish the "state" of NOAA observations and data management systems.
- Establish mechanisms to provide real time and non-real time assessments of the quality of NOAA's observations.

2. NOAA will promote national and international cooperation in developing this system.

- Increased use of other nations' organizations' observation platforms, resources, and assets to meet user observation and data management requirements.
- Increased number of partnerships that promote international cooperation in global observations and data management programs.

The following milestones will be accomplished within 30 days of schedule in order to enable needed performance improvements:

- Recognize, leverage, and increase use of observing assets of other nations and other organizations.
- Pursue partnerships that promote cooperation in observations and data management programs.

3. NOAA will promote regional and local cooperation in developing this system.

- Increased use of other regional monitoring and observation platforms, resources, and assets to meet user observation and data management requirements.
- Increased number of partnerships that promote regional and local cooperation in global and coastal observations and data management programs.

The following five cross-cutting priorities will be fully supported by NESDIS as indicated:

2. ENVIRONMENTAL LITERACY, OUTREACH AND EDUCATION

NOAA will apply the agency's wide spectrum of environmental science expertise to establish an environmental literacy program, a comprehensive undertaking to educate present and future generations about the changing earth and its processes. This strategy to improve public response to natural hazards and assist state and local natural resource management will also ensure that decision makers have access to information needed for appropriate response to risks and environmental change.

Strategies and Measures of Success include:

1. NOAA will improve public awareness of its mission goals and accomplishments, as well as basic knowledge of the environment and human interactions with it.

- Increased number of favorable public survey scores of NOAA's role and achievements.

2. NOAA will create an agency-wide mechanism for distributing and using its educational materials, and for measuring outreach effectiveness.

- Increased number of favorable survey scores of NOAA's performance in delivering accurate, prompt and comprehensible information.

3. NOAA will actively encourage and promote careers in the environmental sciences.

- Increased number and diversity of college students graduating each year in fields related to ocean, climate, atmospheric, and social sciences.
- Increased number of graduate and Ph.D.- level scientists in environmental sciences graduating from minority-serving institutions.

3. SOUND, STATE-OF-THE-ART RESEARCH

NOAA will support high quality research underpinning NOAA's environmental analysis, prediction, and ecosystem management missions. The agency will develop and implement the new products, services, and approaches to ecosystem management needed by a nation facing urgent environmental, economic and public safety challenges.

Strategies and Measures of Success include:

1. NOAA will increase its investments in both short-term and long-term research, and in advanced technology development to understand, describe, and predict changes in the natural environment.

- C Recognized high standards for utility, objectivity, and integrity
- C Increased number of recognized new discoveries, findings, or applications

2. NOAA will accelerate the transfer of knowledge and technology into operational use and ecosystem management.

- C Increased use of models and assessments among scientists, economists, social scientists, operations, and ecosystem managers inside and outside NOAA.
- C Increased transfer of NOAA models, forecasts, products, and services from research into operations and ecosystem management

4. INTERNATIONAL COOPERATION AND COLLABORATION

A rapidly shifting political, cultural and economic world requires that Federal agencies like NOAA – involved in world affairs – cultivate fresh approaches and new services to maintain U.S. leadership in these fields. NOAA will support and promote national policies and interests in ecosystem management, climate change, Earth observation, and weather forecasting, and seek to enable global partners to benefit from this leadership. Such international collaboration in scientific understanding will significantly benefit the American public through economic and social advantages, and the development of services and products to enhance every citizen's quality of life.

Strategies and Measures of Success include:

1. NOAA will leverage United Nations Specialized Agency agreements, as well as bilateral and multilateral relationships with individual countries and organizations, to maximize the development and use of NOAA research, environmental science services and environmental management for the mutual benefit of all parties.

- C Increased number of new international agreements covering NOAA technical assistance and capacity building transfers.

2. NOAA will promote international consensus and cooperation in support of NOAA's mission and U.S. foreign policy through multilateral and bilateral conferences and relationships.

- C Increased number of organizational objectives achieved through bilateral and multilateral relationships.

5. HOMELAND SECURITY

NOAA core missions of environmental prediction and management are manifested in more than 80 capabilities that support America's efforts to prepare for and, if necessary, respond to terrorist attacks. NOAA is also ready to quickly provide other NOAA assets – ships, aircraft, global observation systems and professional law enforcement officers to serve the Nation when the need arises.

Strategies and Measures of Success include:

NOAA will expand its support for homeland security, coordinating delivery of its products, services and

capabilities to Federal, state, and local emergency managers and responders, and strengthening its own infrastructure to protect agency personnel, facilities, and information services.

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- C Improved certainty of continuance of operations for critical NOAA services in event of national crises.

6. ORGANIZATIONAL EXCELLENCE

Facilities, Infrastructure, Security, Human Capital and Administrative Services

Consistent with the President's Management Agenda, this strategic plan provides a framework facilitating enhanced NOAA administrative services, including financial performance, human resources, information technology and electronic government, grants management, competitive sourcing, and budget and performance integration. These improvements will center on customer-focused, interdependent and mission-aligned programs, as well as integrated administrative infrastructure, stable funding streams and lower overall costs of acquisition, operation and maintenance.

Strategies and Measures of Success include:

1. NOAA will expand workforce training, incentives, succession planning and other administrative tools available to recruit and retain a skilled workforce.

- C Complete a Human Resources Strategic Plan by the end of FY 2003.

2. NOAA will improve processes for requirements development, construction processes, consolidation of services and facilities and increase funding for deferred maintenance.

- C Complete a Facilities Management Strategic Plan by the end of FY 2003.
- C Increase the number of facilities with improved collocation of NOAA services and/or strategic partners.

Appendix A Table 1 - Performance Measures

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NESDIS supports all NOAA Mission Goals through the Integrated Global Environmental Observation and Data Management System Cross-cutting Priority		
Line Office Measure	Baseline	Target
Strategy: Monitor & Observe		
# of data supports per operations personnel	1150 (FY2002)	1200 (FY2003) * New target will be developed based on automation study planned for Q3.
% of time NOAA managed on-orbit satellite systems provide mission critical data that satisfy validated customer requirements	TBD (FY2004)	TBD
% of data acquired from non-NOAA satellite sources that satisfy validated customer requirements	TBD (FY 2004)	TBD
% of data acquired from alternative sources that satisfy validated customer requirements	TBD (FY 2004)	TBD
% of time NESDIS in-situ observational systems meet validated customer requirements for observational data from critical systems	TBD (FY 2004)	TBD
% of planned contract milestones accomplished in 30-days of target	80% (2003)	90% (2008)
% transmission rate of SARSAT distress alert and location information to search and rescue authorities within targeted time	90% transmission rate of SARSAT distress alert and location information to search and rescue authorities within 1 hour.(2003)	% transmission rate of SARSAT distress alert and location information to search and rescue authorities within targeted time (TBD FY04)
Strategy: Understand & Describe		
# new techniques successfully transitioned to operational use	TBD (FY 2004)	TBD
# of new products successfully transitioned into operational use within 30 days after target and having established quality control management procedures in place.	TBD (FY 2004)	TBD
Strategy: Assess & Predict		

% validated customer required critical satellite products transmitted within targeted time after data collection	TBD (FY2004)	TBD	DRAFT
# of products successfully transitioned into operational use within 30 days of target and having established quality control management procedures in place	TBD (FY2004)	TBD	
# of decision support products that respond to priority National policy or environmental-monitoring needs	40/year (2003)	40/year (2008)	
% increase in data distributed on line	TBD (FY 2004)	TBD	
% of time that by the 15th day after the end of the previous season, provide a comprehensive seasonal State of the Climate reports for use in seasonal forecast verification	100% (2003)	100% (2008)	
% of National Explained Variance for temperature and precipitation in the Climate Reference Network	87% (2003)	87% (2008)	
% of archive data for which metadata information is available on line	TBD (FY2004)	TBD	
% validated customer required critical satellite products transmitted within targeted time after data collection	96% validated customer required tactical (100m resolution) all weather, day/night ice products produced and delivered (2003)	99% validated customer required tactical (100m resolution) all weather, day/night ice products produced and delivered (2008)	
Strategy: Engage, Advise & Inform			
% increase in data distributed on line	TBD (FY2004)	TBD	
% of archive data for which metadata information is available on line	TBD (FY2004)	TBD	
# of customer orders filled per relevant staff member	480/year (2003)	480/year (2008)	
# days to respond to validated customer requests for archive data	TBD (FY 2004)	TBD	
# days from observation to archive accessibility	TBD (FY 2004)	TBD	

Appendix A Table 2 - Cross Cutting Priorities Performance Measures

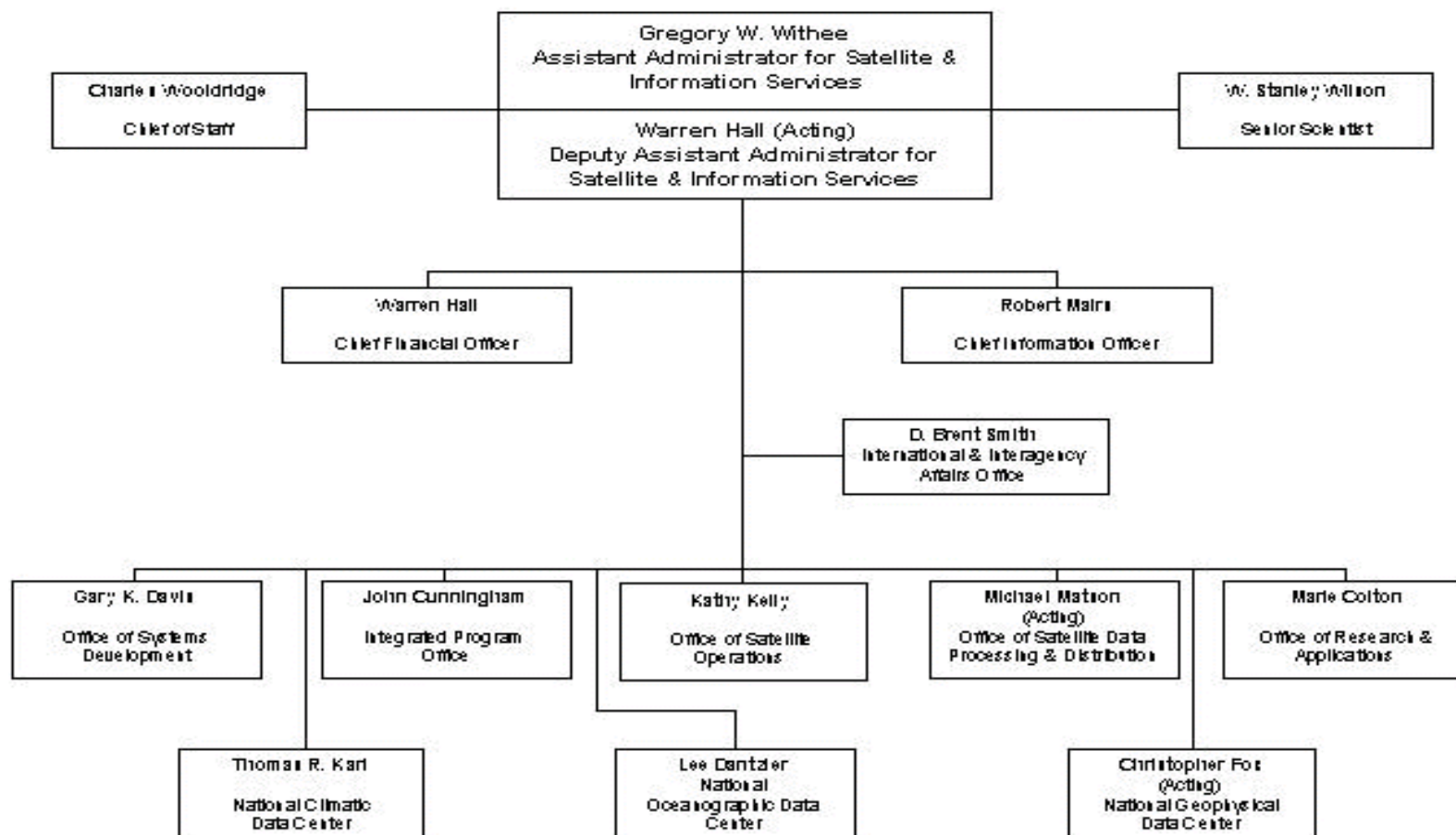
NOAA Performance Measure	Line Office Measure	Baseline	Target
INTEGRATED GLOBAL ENVIRONMENTAL OBSERVATION AND DATA MANAGEMENT SYSTEM			
NOAA will develop an integrated NOAA observation and data management architecture based on user requirements	% milestones achieved within 30 days of target	N/A (will result from the architecture)	TBD (will result from the architecture)
NOAA will implement an integrated NOAA observation and data management architecture	Progress towards building an integrated global environmental observation and data management system	TBD (FY 2004)	TBD
ENVIRONMENTAL LITERACY, OUTREACH, AND EDUCATION			
NOAA will improve public awareness of its mission goals and accomplishments, as well as basic knowledge of the environment and human interactions with it.	NESDIS will support the NOAA Strategic Plan	TBD (FY2004)	TBD
NOAA will create an agency-wide mechanism for distributing and using its educational materials, and for measuring outreach effectiveness.	NESDIS will support the NOAA Strategic Plan	TBD (FY 2004)	TBD
NOAA will actively encourage and promote careers in the environmental sciences	NESDIS will support the NOAA Strategic Plan	TBD (FY 2004)	TBD
SOUND, STATE-OF-THE-ART RESEARCH			
NOAA will increase the number of recognized new discoveries, findings, or applications	Number of peer-reviewed papers per year	5 (2002)	10 (2008)
INTERNATIONAL COOPERATION AND COLLABORATION			
NOAA will promote international consensus and cooperation in support of NOAA's mission and U.S. foreign policy through bilateral and multilateral relationships	Increased number of organizational objectives achieved through bilateral and multilateral relationships	TBD (FY 2004)	TBD
NOAA will promote international consensus and cooperation in support of NOAA's mission and U.S. foreign policy through bilateral and multilateral	Increased number of NOAA technical assistance initiatives and capacity-building transfers implemented	1 data management capacity building exchange/year under auspices	4 / year (2010)

relationships		(2003)	DRAFT
HOMELAND SECURITY			
Improved certainty of continuance of operations for critical NOAA services in event of national crises	NESDIS will support the NOAA Strategic Plan	TBD (FY 2004)	TBD
ORGANIZATIONAL EXCELLENCE			
NOAA will expand workforce training, incentives, succession planning and other administrative tools available to recruit and retain a skilled workforce.	NESDIS will support the NOAA Strategic Plan	TBD (FY 2004)	TBD
NOAA will improve processes for requirements development, construction processes, consolidation of services and facilities and increase funding for deferred maintenance.	NESDIS will support the NOAA Strategic Plan	2003	2008

Appendix B - Organizational Chart



National Environmental Satellite, Data, and Information Service Organizational Chart



April 2003